

Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)	1	Mechanical Completion Certificate (MCC)	
			2	Ready for Startup Certificate (RFSU)	
3	System Punch Lists				
			4	System Limits Marked Up P&ID	
5	System Index				
			6	Piping Pre-Commissioning	
			6.01	Piping Test Packs	
			6.02	Piping Pre-commissioning Check Lists	
7	Piping Commissioning		7.01	Service Test, GLT, CLT and N2 Purging Certificates	
			7.02	Piping Commissioning Check Lists	
8	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)	Mechanical Pre-Commissioning		
			8.01	System Mechanical Index	
			8.02	Equipment Drawings	
			8.03	Equipment Datasheets	
			8.04	Boxing-up Certificates	

		System ID 030-LP-001		System Description Substation building clean agent system	
<p align="center"> Project No. 1251-100 Crude Oil Tank Farms Project, Agrod Area 30 (Module-1) </p>					
					



		8.05 Grouting Certificates	
		8.06 Pre-Alignment Certificates	
		8.07 Mechanical Pre-Commissioning Checklists	
9	Mechanical Commissioning	9.01 Final Alignment Certificates	
		9.02 Motor Solo Run Certificates	
		9.03 Mechanical Run Test (MRT) Certificates	
		9.04 Mechanical Commissioning Checklists	
		9.05 Mechanical Supplier Check Lists & Reports	
10	Instrumentation Pre-Commissioning	10.01 System Instrument Index	
		10.02 Instrument Data Sheets	
		10.03 Instrument Cable Schedule	
		10.04 System Instrumentation Wiring Diagram	
		10.05 Hook-up Drawing (Mechanical & Pneumatic)	
		10.06 Instruments Cables Schedule	
		10.07 Instruments Cables Laying Certificates	
		10.08 Instruments Cables Termination Certificates	
		10.09 Instruments Cables Testing Certificates	
		10.10 Instruments Calibration Certificates	
		10.11 Instrument Loop Checks Certificates	
		10.12 Instrumentation Pre-Commissioning Check Lists	
		10.13 Instrumentation Supplier Check Lists & Reports	
11	Instrumentation Commissioning	11.01 Instrumentation Function Test Certificates	
		11.02 Instrumentation Supplier Check Lists & Reports	
12	Electrical Pre-Commissioning	12.01 System Electrical Index	
		12.02 Electrical Drawings	
		12.03 Motor Datasheets	
		12.04 Electrical Cables Schedule	
		12.05 Electrical Cables Laying Certificates	
		12.06 Electrical Cables Testing Certificates	
		12.07 Electrical Cables Termination Certificates	
		12.08 FAT Reports & Certificates	
		12.09 SAT Reports & Certificates	
		12.10 Electrical Pre-Commissioning Check Lists	
		12.11 Electrical Supplier Check Lists & Reports	
Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)	

13	Electrical Commissioning	
	13.01) Electrical -Commissioning Check Lists	
	13.02) Electrical Supplier Check Lists & Reports	
14	Red Marked-up Drawings	
	14.01) P&ID	
	14.02) Instrumentation Drawings	
	14.03) Electrical Drawings	

System ID	030-LP-001	Substation building clean agent system
System Description		

Pre-commissioning and Commissioning Dossier Content:

Section	Description	Status
1-	Mechanical Completion Certificate (MCC) Ready For Start-up (RFSU)	
2-	System Punch Lists	
3-	System Limits Marked Up	
4-	FAT Test Report & Certificates	
5-	System Index.	
6-A-	Electrical Pre-commissioning	
	6.A.1 General Arrangement and Wiring Diagrams	
	6.A.2 Single line Diagram	
	6.A.3 Electrical Panel Schedule	
	6.A.4 Electrical Cable Schedule	
	6.A.5 Pre-Commissioning Check List	
6.B-	Electrical Commissioning	
	6.B.1 Commissioning Check List	
7-	Red Mark-Up Drawings (If Any)	

<div><div><div>Enppi PETROJET</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>I-Mechanical Completion Certificate (MCC)</div>					

SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

PROJECT TITLE : CRUDE OIL TANK FARM (AGROOD AREA)

PROJECT No : 1251-100

SYSTEM NAME : Substation Building Clean Agent System

SYSTEM ID : 030-LP-001



THIS IS TO CERTIFY THAT:

- THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.
- ALL PRE-COMMISSIONING RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.
- Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.
- ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.
- THIS SYSTEM IS MECHANICALLY COMPLETED ON THE DATE 13/07/2021 AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.


EXCEPTIONS:

NOTE: ACCEPTANCE OF THE ABOVE SYSTEM DOES NOT RELIEVE ENPPI/CONSTRUCTION CONTRACTOR FROM THEIR CONTRACTUAL OBLIGATIONS AND RESPONSIBILITIES.

COMPANY	PETROJET	ENPPI	PPC
NAME	H. Abdallah	Mohamed Abba	Mohamed & Hani Saeed
TITLE		C. St. Mgr	M. S. Saeed
SIGNATURE	GC Engineer		9/8/2021
DATE	13/07/2021		

<div><p>Enppi</p><p>Project: 01251-100</p><p>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p></div>	
System ID	030-LP-001
System Description	Substation building clean agent system

2- Ready for Startup Certificate (RFSU)

DATE	30-8-2021	5/9/2021
SIGNATURE		M. amar
TITLE	Commissioning Manager	I-Engineer
NAME	Ahmed El Shafie	Mohamed amar
COMPANY	CONSORTIUM	PPC

EXCEPTIONS:

(*) Cable cellar room doors louver vent (Air vent) to be closed permanently.

(*) For switch gear, HVAC duct fire damper access panel to be seal properly

- Switch gear room door to be align and to be seal properly with weather strips.

THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM / AREA / PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.

- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.

- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.

- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

PROJECT TITLE : EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-03)

PROJECT No. : 1251-100

SYSTEM / AREA / PLANT : Substation building clean agent system

SYSTEM / AREA / PLANT No. : 030-LP-001

READY FOR START UP CERTIFICATE



Enppi




3-System Punch Lists

System ID	030-LP-001
System Description	Substation building clean agent system







Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



SYSTEM PUNCH LIST			
PROJECT TITLE : EGPC Crude Oil Tank Farms Project, Agrod Area 30 (Module-01)			
PROJECT NUMBER : 1251-100		DISCIPLINE : Mechanical	
SYSTEM NAME : Substation Building Clean Agent System		SYSTEM ID : 030-LP-001	
SUB-SYSTEM NAME : Substation Building Clean Agent System		SUB-SYSTEM ID : 030-LP-001	
No	DESCRIPTION	CAT	ACTION BY
1	Clean agent nozzles to be installed	A	PTJ
2	Touch up painting to be done	C	PTJ
3	slap opening to be sealed	B	PTJ
4	leak test to be done	A	PTJ
5	system piping test pack to be reinstated	A	PTJ
6	pilot network to be installed	A	PTJ
7	openings to be sealed at cylinder room wall	B	PTJ
8	Hour keeping at cylinder room to be cleaned	C	PTJ
9	All solenoids to be installed	A	PTJ
10	30-HS-006 to be installed	A	PTJ
11	30-HS-007 to be installed	A	PTJ
12	Support in Battery room to be in Axis	A	PTJ
Support in Battery room to be in Axis			
CAT: CATEGORY (A,B,C), ACTION BY: (ENPPL, CONST, CONTRACTOR, SUPPLIER,...), DISP: DISCIPLINE (PIP, MECH, ELECT, INST,...)			
COMPANY		ENPPI	
NAME		Ahmed Helmy	
SIGNATURE			
DATE		25/5/2021	




<div><div><div>Enppi</div><div>پتروپي</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>		<div>System ID</div> <div>030-LP-001</div>	<div>System Description</div> <div>Substation building clean agent system</div>
<div>4-System Limits Marked Up P&ID</div>			

<div>  <div> Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA) </div>  </div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>5-System Index</div>					

6- Piping Pre-Commissioning


System ID	030-LP-001
System Description	Substation building clean agent system





Enppi

Project: 01251-100



CRUDE OIL TANK FARM PROJECT (AGROOD AREA)





الهيئة العامة للغذاء والدواء
Petrojet Engineering Company



<div><div><div>Enppi</div><div>PETROJET</div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>6.01 - Piping Test Packs</div>					






6.02- Piping Pre-commissioning Check Lists


 <p>Enppi PETROJET</p> <p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p>  <p>النفط القطر البحر</p>	System ID	030-LP-001	System Description	Substation building clean agent system
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<div data-bbox="1133 1926 1420 2016">  </div> <div data-bbox="526 1926 1037 1993"> <p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p> </div> <div data-bbox="223 1904 430 1993">  </div>	<div data-bbox="1324 1859 1436 1904">System ID</div> <div data-bbox="973 1859 1085 1904">030-LP-001</div>
<div data-bbox="1244 1814 1436 1859">System Description</div> <div data-bbox="750 1814 1085 1859">Substation building clean agent system</div>	
<div data-bbox="606 985 1037 1052">7- Piping Commissioning</div>	

7.01- Service Test, GLT, CLT and N2 Purging Certificates

Substation building clean agent system	System Description
030-LP-001	System ID
<div><div><p>Enppi PETROJET</p></div><div><p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p></div><div><p>الهيئة العامة للغذاء والدواء Ministry of Health</p></div></div>	


  		<h2 style="text-align: center;">Gross Leak Test (GLT)</h2> <h3 style="text-align: center;">Certificate of Completion and Acceptance</h3>	
Client	Egyptian General Petroleum Corporation (EGPC)	Project No.	1251-100
Project Description	Crude Oil Tank Farm Project	Location	Agrood Area 30 (Module-01)
System	030-LP-001 (Substation Building Clean Agent System)	Loop No.	030-LP-001 (Substation Building Clean Agent System)
Test Medium	Air	Test Pressure	2.8 barg
Completion Date	12/6/2021	Attachments	Leak Test Loop Marked-up P&ID
<h3 style="text-align: center;">Remarks</h3> <ul style="list-style-type: none"> • This is to certify that the system described in this certificate of completion has been Gross Leak Tested (GLT) in accordance with the requirements of the scope of work. • The test has been witnessed by client representatives and accepted as complete in all aspects on the data marked on the certificate of completion and acceptance. • The test has been completed to the client satisfaction. 			
Performed by PETROJET		Approved by PPC	
Name:	Mahmoud Radwan	Name:	Abdelhak Fathy
Title:	Sit Manager	Title:	Construction Engineer
Signature:		Signature:	
Date:	12.6.2021	Date:	12/6/2021

		PUFF TEST PROCEDURE FOR NOVEC 1230 FIRE SUPPRESSION SYSTEM		Doc No: 1251-100-S24-P01-0004	Page 1 of 1
NEW CRUDE OIL TANK FARM		PUFF TEST OF THE NOVEC 1230 SYSTEM PIPEWORK			
CCL/003		Contract Requirements: System: <u>NOVEC 1230</u> Location: <u>AGROOD, AREA-30, SUBSTATION</u> Reference: <u>BATTERY ROOM</u> Date: <u>11-08-2021</u>			
To be witnessed:- <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		By:- _____			
Drawing No(s): _____		Signature: _____			
MECHANICAL		Activities:			
1. Confirm that the system installation is completed as per the final approved construction drawings.		OK			
2. Inspect all system components for any sign of damages, loose fittings etc.		OK			
3. Confirm orifice units are in place and are of correct size and its direction as per the as built calculation.		OK			
4. Confirm that all the plastic bags are places over all discharge nozzles.		OK			
5. Confirm that "Puff Test" gas is air.		OK			
6. Confirm that "Puff Test" pressure is 3 bar.		OK			
7. Inspect that all the plastic bags are below off confirming that the pipes are free from obstructions.		OK			
8. Confirm all nozzles size & drill size are installed in the same location as per the as built calculations.		OK			
RESULT ASSESSMENT:		SIGNATURE: _____ REP. NAME: <u>Rajasekaran</u> DATE: <u>11.08.2021</u> REVIEW/APPROVA: _____			
SUB-CONTRACTOR		ENPPI			
EGPC		Signature: _____ Date: <u>11-08-2021</u> Review/Approva: _____			

		PUFF TEST PROCEDURE FOR NOVEC 1230 FIRE SUPPRESSION SYSTEM		Doc No: 1251-100-S24-P01-0004	Page 1 of 1
NEW CRUDE OIL TANK FARM		PUFF TEST OF THE NOVEC 1230 SYSTEM PIPEWORK			
Contract Requirements:		System: <u>NOVEC 1230</u> Location: <u>AGROOD, AREA-20, SUBSTATION</u> Reference: <u>CABLE CELLAR</u> Date: <u>11-08-2021</u>			
To be witnessed:-		By:- _____			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Contract Requirements:			
Drawing No(s):		System: <u>NOVEC 1230</u> Location: <u>AGROOD, AREA-20, SUBSTATION</u> Reference: <u>CABLE CELLAR</u> Date: <u>11-08-2021</u>			
Activities:		SIGNATURES			
MECHANICAL		OK Not OK N/A			
1. Confirm that the system installation is completed as per the final approved construction drawings.		OK			
2. Inspect all system components for any sign of damages, loose fittings etc.		OK			
3. Confirm orifice units are in place and are of correct size and its direction as per the as built calculation.		OK			
4. Confirm that all the plastic bags are places over all discharge nozzles.		OK			
5. Confirm that "Puff Test" gas is air.		OK			
6. Confirm that "Puff Test" pressure is 3 bar.		OK			
7. Inspect that all the plastic bags are below off confirming that the pipes are free from obstructions.		OK			
8. Confirm all nozzles size & drill size are installed in the same location as per the as built calculations.		OK			
RESULT ASSESSMENT:					
SIGNATURE		SUB-CONTRACTOR			
REP. NAME		ENPPI			
DATE		EGPC			
REVIEW/APPROVA		11-08-2021			


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Fire & Security UAE LLC

	NEW CRUDE OIL TANK FARM	PUFF TEST PROCEDURE FOR NOVEC 1230 FIRE SUPPRESSION SYSTEM	Doc No: 1251-100-S24-P01-0004	Page 1 of 1
		PUFF TEST OF THE NOVEC 1230 SYSTEM PIPEWORK		
Contract Requirements: System: <u>NOVEC 1230</u> Location: <u>AGROD - AREA-30, SUBSTATION</u> Reference: <u>SWITCH GEAR ROOM</u> Date: <u>11-03-2021</u>				
To be witnessed:- <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No By: _____				
MECHANICAL 1. Confirm that the system installation is completed as per the final approved construction drawings. 2. Inspect all system components for any sign of damages, loose fittings etc. 3. Confirm orifice units are in place and are of correct size and its direction as per the as built calculation. 4. Confirm that all the plastic bags are places over all discharge nozzles. 5. Confirm that "Puff Test" gas is air. 6. Confirm that "Puff Test" pressure is 3 bar. 7. Inspect that all the plastic bags are below off confirming that the pipes are free from obstructions. 8. Confirm all nozzles size & drill size are installed in the same location as per the as built calculations.				
Activities: OK Not OK N/A SIGNATURES				
RESULT ASSESSMENT: SIGNATURE: <u>Raj</u> REP. NAME: <u>RAGASEKARAN</u> DATE: <u>11-03-2021</u> REVIEW/APPROVA: _____ SUB-CONTRACTOR: _____ ENPPI: <u>Shafiq</u> EGPC: <u>M. Omar</u>				









EGPC		ENPPI		SUB-CONTRACTOR	
11-8-2021		11-8-2021		11-08-2021	
M. owner		Alved El Shie		RASE KAPAN	
overlapped over		step		12g	
RESULT ASSESSMENT:					
1. Confirm that the system installation is completed as per the final approved construction drawings.					
2. Inspect all system components for any sign of damages, loose fittings etc.					
3. Confirm orifice units are in place and are of correct size and its direction as per the as built calculation.					
4. Confirm that all the plastic bags are places over all discharge nozzles.					
5. Confirm that "Puff Test" gas is air.					
6. Confirm that "Puff Test" pressure is 3 bar.					
7. Inspect that all the plastic bags are below off confirming that the pipes are free from obstructions.					
8. Confirm all nozzles size & drill size are installed in the same location as per the as built calculations.					
MECHANICAL					
Activities:					
SIGNATURES					
OK Not OK N/A					
Contract Requirements:					
System: NOVEC 1230					
Location: AG ROAD, AREA-30, SUBSTATION					
Reference: CONTROL ROOM					
Date: 11-08-2021					
To be witnessed:-					
By: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
CCL/003					
PUFF TEST OF THE NOVEC 1230 SYSTEM PIPEWORK					
NEW CRUDE OIL TANK FARM		PUFF TEST PROCEDURE FOR NOVEC 1230 FIRE SUPPRESSION SYSTEM		Doc No: 1251-100-S24-P01-0004	
tyco		Fire & Security UAE LLC		Page 1 of 1	

Enppi

		NEW CRUDE OIL TANK FARM FIRE SUPPRESSION SYSTEM	Doc No: 1251-100-S24-P01-0004 Page 1 of 1
CCL/003		PUFF TEST OF THE NOVEC 1230 SYSTEM PIPEWORK	
Contract Requirements:			
System: <u>NOVEC 1230</u>			
Location: <u>AGROD AREA-30 SUBSTATION</u>			
Reference: <u>TELECOM ROOM</u>			
Date: <u>11-08-2021</u>			
To be witnessed: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
By: _____			
SIGNATURES			
Activities:			
MECHANICAL			
1. Confirm that the system installation is completed as per the final approved construction drawings.			
2. Inspect all system components for any sign of damages, loose fittings etc.			
3. Confirm orifice units are in place and are of correct size and its direction as per the as built calculation.			
4. Confirm that all the plastic bags are places over all discharge nozzles.			
5. Confirm that "Puff Test" gas is air.			
6. Confirm that "Puff Test" pressure is 3 bar.			
7. Inspect that all the plastic bags are below off confirming that the pipes are free from obstructions.			
8. Confirm all nozzles size & drill size are installed in the same location as per the as built calculations.			
RESULT ASSESSMENT:			
SIGNATURE			
REP. NAME			
DATE			
REVIEW/APPROVA			
SUB-CONTRACTOR		ENPPI	
EGPC		EGPC	

Fire & Security UAE LLC

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 PETROJET		 ENPPI		 مؤسسة البترول Petrochem Pipelines Company		 EGPC	
<h2 style="text-align: center;">Gross Leak Test (GLT)</h2> <h3 style="text-align: center;">Certificate of Completion and Acceptance</h3>							
Client		Egyptian General Petroleum Corporation (EGPC)		Project No.		1251-100	
Project Description		Crude Oil Tank Farm Project		Location		Agrood Area 30 (Module-01)	
System		030-LP-001 (Substation Building Clean Agent System)		Loop No.		030-LP-001 (Substation Building Clean Agent System)	
Test Medium		Air		Test Pressure		2.8 barg	
Completion Date		12/6/2021		Leak Test Loop Marked-up P&ID			
Attachments		Remarks					
<ul style="list-style-type: none"> This is to certify that the system described in this certificate of completion has been Gross Leak Tested (GLT) in accordance with the requirements of the scope of work. The test has been witnessed by client representatives and accepted as complete in all aspects on the data marked on the certificate of completion and acceptance. The test has been completed to the client satisfaction. 							
Name:		Mahmoud Radwan		Name:		Abdelrhman Fathy Ahmed Elshorok	
Title:		Sic Manager		Title:		Construction Engineer	
Signature:				Signature:			
Date:		12.6.2021		Date:		12/6/2021	
Performed by		PETROJET		Supervised by		ENPPI	
Approved by		PPC		Name:		Mohamed Abdul Sadek	
Title:				Title:		Mechanical Engineer	
Signature:				Signature:			
Date:		12/6/2021		Date:		12/6/2021	

NFPA 2001 Clean Agent Enclosure Integrity Test

Conducted by:

Tyco Fire & Security U.A.E. L.L.C.
P.O. Box 3333

Abu Dhabi, U.A.E.

Phone 00971 2 6777 776
Fax 00971 2 6768 746

August 06, 2021
CF3G00129

ENCLOSURE INTEGRITY TEST REPORT
CF3G00129

Time: 12:07 PM

Date of Test: August 06, 2021
Tested by: RAJASEKARAN ELMALAI

Job ID: CF3G00129

Company

Name: PPC/ENMPI

Address: AGROOD-AREA-0303-EGYPT, EGYPT

Telephone: 01022994848

Facsimile:

E-mail: mohamed.maher@enppi.com

Contact: Mr. Mohamed Maher

Location

Name: CRUDE OIL TANK FARM PROJECTS

Address: AGROOD- AREA-030

AGROOD

EGYPT

Telephone:

Facsimile:

E-mail: ahmed.elshafie@enppi.com

Contact: Mr. Ahmed Elshafie

Zone Number: SUBSTIAON AGROOD AREA-030

Zone Location: BATTERY ROOM

Zone Description: BATTERY ROOM

High Hazard: BATTERY AND POWER CABINETS

Height of High Hazard: 5.60 meters

Minimum Protected Height: 1.80 meters

Per:

Comments:

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Zone Data

Protected Volume: 442.95 cu m
 Maximum protected height: 5.60 m (includes protected subfloor, if any)
 Minimum Protected height: 1.80 m
 Temperature inside zone: 28 C
 Temperature outside zone: 24 C
 Suppression Gas: Novec 1230 Sapphire
 Gas design concentration: 4.50%
 Weight/Volume of gas: 0.00 kg

Test Checklist

Tanks disconnected? Y
 Free return air flow path? Y
 Outside air pressure tube connected? Y
 HVAC system off? Y
 Panel in discharge mode? N
 Dampers activated? Y
 Static pressure present? Y

Test Data

Static pressure: 0.2 pa (air is blowing out of zone)
 Zone depressurization: 38.2 pa
 Air flow volume: 884 cfm
 Orifice plate ratio: 1.00
 Indicated leakage area (depressurization): 800.060 sq cm 0.080 sq m
 Zone pressurization: 37.2 pa
 Air flow volume: 1024 cfm
 Orifice plate ratio: 1.00
 Indicated leakage area (pressurization): 1086.781 sq cm 0.109 sq m

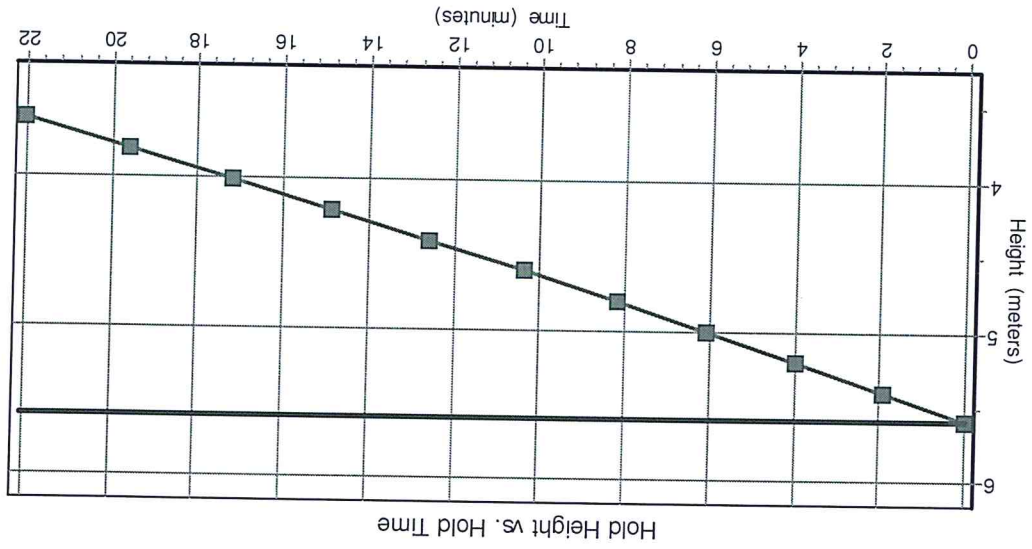
NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Test Procedure Leakage Area calculation results:
 Leakage area: 943.420 sq cm 0.094 sq m
 Predicted hold time at 1.80 m is 48.30 minutes.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Hold Height Hold Time

5.60	0.00
5.41	1.92
5.21	3.97
5.01	6.06
4.81	8.20
4.61	10.37
4.41	12.60
4.21	14.87
4.01	17.20
3.81	19.59
3.61	22.04



ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Leakage Survey

Problem Area	Rsp	Cor	Comments
Walls floor to deck?	N/A	Yes	
Walls caulked at floor?	N/A		
Walls caulked at deck?	N/A		
Doors weather-stipped?		Yes	
Door, drop seals?		Yes	
Door closers installed and adjusted?		Yes	
Windows caulked?	N/A		
Exiting conduits sealed?		Yes	
Exiting cables sealed?		Yes	
Cable trays sealed?		Yes	
All holes, penetrations sealed?		Yes	
Floor drains trapped and filled?	N/A		
Dampers installed on all exiting ducts?		Yes	
Dampers working and adjusted?		Yes	
Block walls painted?		Yes	
Ceiling tiles clipped?	N/A		
HVAC shut down?		Yes	
Gas exhaust dampered?			
Gas exhaust damper closed?			

Rsp = Response
Cor = Corrected
Par = Partial
RY = Reported Yes
? = Unknown
N/A = Not Applicable
I/A = Inaccessible

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Authority Having Jurisdiction

Name: RAJASEKARAN ELUMALAI

Title: COMMISSIONING ENGINEER

Company: TYCO FIRE and SECURITY

Telephone: 00971563988654 Facsimile: 026768746

E-mail: rajasekaran.elumalai@jci.com

Attendance

Mr. Mohamed Omar

Mr. Mohamed Elfeky

Mohamed Maher

PPC

ENPPI

ENPPI

H. Omar
for Aug

Conditions

This test is a calculated prediction of the hold time and is based on the NFPA Enclosure Integrity Procedure, Appendix B, NFPA 12A, 1992 edition and Appendix C, NFPA 2001, 2000 edition and on the condition of the room at the time of the test. This test was conducted in accordance with the NFPA procedure.

The Software was produced by Fire Safety Technology division of Worldwide Trade & Services, Inc. and is based on the equations and calculations in the above cited NFPA standards.

The Fire Safety Technology division nor Worldwide Trade & Services, Inc. assumes no responsibility or liability for the passage of a discharge test or for maintaining the concentration of the suppression gas for the predicted time in case of an actual emergency.

To assure the sealing integrity of the zone, NFPA 2001, 2000 edition Section 4-4 requires an annual inspection and possible retesting of the zone.

Test conducted by:

Raj

RAJASEKARAN ELUMALAI

ATTENTION

This room is protected with a clean agent gaseous fire extinguishing system.

To be effective in a fire emergency the fire suppression agent must be retained in the room. Upon installation of this system, all doors were equipped with automatic closers, weather stripping and floor seals; all cables and conduits leading in or out of the room were sealed (including those above the ceiling or under the raised floor); and all leaks or cracks were sealed. As required, the room was tested per NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Procedure to assure it was properly sealed to retain the fire suppression agent.

For the safety of the occupants and equipment in this room:

1. Doors must not be blocked open.

2. All weather stripping and seals must be maintained in good operating condition.

3. Any new cables or conduits leading in or out of the room must be caulked and sealed.

4. Any holes or penetrations through the walls must be repaired and sealed.

To assure the sealing integrity of this room, NFPA 2001, 2000 edition, Section 4-4 requires an annual inspection and possible retesting of this room.

Test results:

Date: **August 06, 2021**

Leakage Area: **0.094 sq m**

Hold Time: **48.30 minutes**

Minimum Hold Height: **1.80 m**

Next inspection due one year from Test Date.

For more information or to schedule an inspection contact:

Tyco Fire & Security U.A.E. L.L.C.

P.O. Box 3333

Abu Dhabi, U.A.E.

Phone 00971 2 6777 776

Fax 00971 2 6768 746

NFPA 2001 Clean Agent Enclosure Integrity Test

Conducted by:

Tyco Fire & Security U.A.E. L.L.C.
P.O. Box 3333
Abu Dhabi, U.A.E.

Phone 00971 2 6777 776
Fax 00971 2 6768 746

August 09, 2021
CF3G00129

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Date of Test: August 09, 2021
Time: 2:30 PM

Tested by: RAJASEKARAN ELUMALAI
Job ID: CF3G00129

Company

Name: PPC/ENNPI
Address: AGROOD-AREA-030-EGYPT.
EGYPT

Telephone: 01022994848
E-mail: mohamed.maher@enppi.com
Contact: Mr.Mohamed Maher

Location
Name: CRUDE OIL TANK FARM PROJECTS
Address: AGROOD AREA-30
AGROOD
EGYPT

Telephone: 01022994848
E-mail: ahmed.elshafe@enppi.com
Contact: Mr.Ahmed Elshafie

Zone Number: AGROOD AREA-30 SUBSTIAON
Zone Location: CONTROL ROOM
Zone Description: CONTROL ROOM

High Hazard: FGS/PLC CABINET
Height of High Hazard: 5.60 meters
Minimum Protected Height: 2.10 meters
Per:

Comments: HVAC return duct does not have fire damper. fire damper to be install.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Zone Data

Protected Volume: 183.68 cu m
 Maximum protected height: 5.60 m (includes protected subfloor, if any)
 Minimum Protected height: 2.10 m
 Temperature inside zone: 28 C
 Temperature outside zone: 24 C
 Suppression Gas: Novec 1230 Sapphire
 Gas design concentration: 4.50%
 Weight/Volume of gas: 0.00 kg

Test Checklist

Tanks disconnected? Y
 Free return air flow path? Y
 Outside air pressure tube connected? Y
 HVAC system off? Y
 Panel in discharge mode? N
 Dampers activated? Y
 Static pressure present? Y

Test Data

Static pressure: 0.5 pa (air is blowing into zone)
 Zone depressurization: 37.2 pa
 Air flow volume: 1128 cfm
 Orifice plate ratio: 1.00
 Indicated leakage area (depressurization): 1254.859 sq cm 0.125 sq m
 Zone pressurization: 32.0 pa
 Air flow volume: 1293 cfm
 Orifice plate ratio: 1.00
 Indicated leakage area (pressurization): 1218.744 sq cm 0.122 sq m

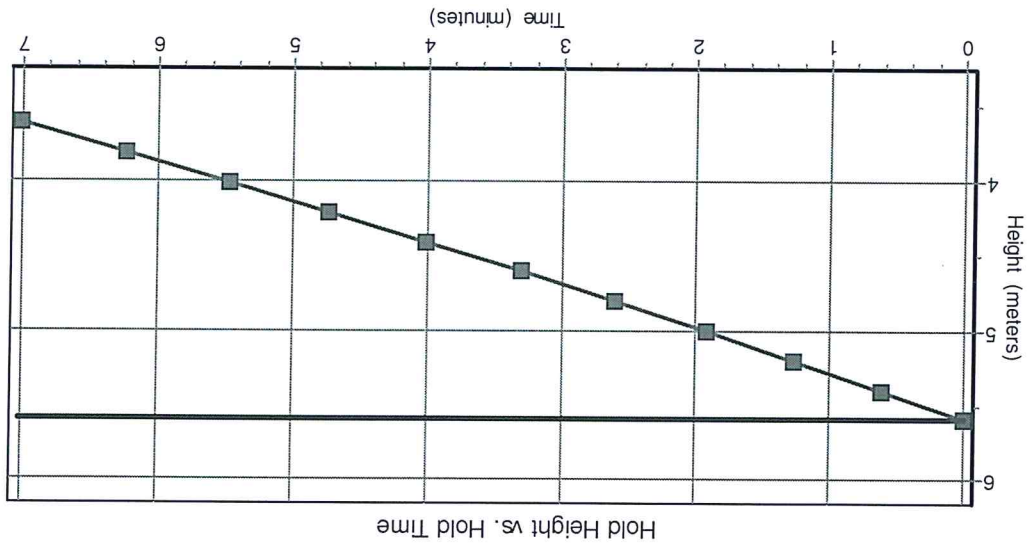
NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Test Procedure Leakage Area calculation results:
 Leakage area: 1236.801 sq cm 0.124 sq m
 Predicted hold time at 2.10 m is 13.80 minutes.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Hold Height Hold Time

5.60	0.00
5.41	0.61
5.21	1.26
5.01	1.93
4.81	2.61
4.61	3.30
4.41	4.01
4.21	4.73
4.01	5.48
3.81	6.24
3.61	7.02



ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Leakage Survey

Problem Area	Rsp	Cor	Comments
Walls floor to deck?		Yes	
Walls caulked at floor?	N/A		
Walls caulked at deck?	N/A		
Doors weather-stipped?		Yes	
Door, drop seals?		Yes	
Door closers installed and adjusted?		Yes	
Windows caulked?	N/A		
Exiting conduits sealed?		Yes	
Exiting cables sealed?		Yes	
Cable trays sealed?		Yes	
All holes, penetrations sealed?		Yes	
Floor drains trapped and filled?	N/A		
Dampers installed on all exiting ducts?		Yes	
Dampers working and adjusted?		Yes	
Block walls painted?		Yes	
Ceiling tiles clipped?	N/A		
HVAC shut down?		Yes	
Gas exhaust dampered?	N/A		
Gas exhaust damper closed?		Yes	

Rsp = Response
 Cor = Corrected
 Par = Partial
 RY = Reported Yes
 ? = Unknown
 N/A = Not Applicable
 I/A = Inaccessible

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Authority Having Jurisdiction

Name: RAJASEKARAN ELUMALAI

Title: COMMISSIONING ENGINEER

Company: TYCO FIRE and SECURITY

Telephone: 00971563988654 Facsimile: 026768746

E-mail: rajasekaran.elumalai@jci.com

Attendance

Mr. HAFEZ NOUR

Mr. HOSSAM SALAH

ENPPI

PPC

M. H. Hafez Nour

Conditions

This test is a calculated prediction of the hold time and is based on the NFPA Enclosure Integrity Procedure, Appendix B, NFPA 12A, 1992 edition and Appendix C, NFPA 2001, 2000 edition and on the condition of the room at the time of the test. This test was conducted in accordance with the NFPA procedure.

The Software was produced by Fire Safety Technology division of Worldwide Trade & Services, Inc. and is based on the equations and calculations in the above cited NFPA standards.

The Fire Safety Technology division nor Worldwide Trade & Services, Inc. assumes no responsibility or liability for the passage of a discharge test or for maintaining the concentration of the suppression gas for the predicted time in case of an actual emergency.

To assure the sealing integrity of the zone, NFPA 2001, 2000 edition Section 4-4 requires an annual inspection and possible retesting of the zone.

Test conducted by:

Rajasekaran Elumalai

RAJASEKARAN ELUMALAI

ATTENTION

This room is protected with a clean agent gaseous fire extinguishing system. To be effective in a fire emergency the fire suppression agent must be retained in the room. Upon installation of this system, all doors were equipped with automatic closers, weather stripping and floor seals; all cables and conduits leading in or out of the room were sealed (including those above the ceiling or under the raised floor); and all leaks or cracks were sealed. As required, the room was tested per NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Procedure to assure it was properly sealed to retain the fire suppression agent.

For the safety of the occupants and equipment in this room:

1. Doors must not be blocked open.
 2. All weather stripping and seals must be maintained in good operating condition.
 3. Any new cables or conduits leading in or out of the room must be caulked and sealed.
 4. Any holes or penetrations through the walls must be repaired and sealed.
- To assure the sealing integrity of this room, NFPA 2001, 2000 edition, Section 4-4 requires an annual inspection and possible retesting of this room.

Test results:

Date: **August 09, 2021**
Minimum Hold Height: **2.10 m**
Leakage Area: **0.124 sq m**
Hold Time: **13.80 minutes**
Next inspection due one year from Test Date.

For more information or to schedule an inspection contact:

Tyco Fire & Security U.A.E. L.L.C.
P.O. Box 3333
Abu Dhabi, U.A.E.

Phone 00971 2 6777 776
Fax 00971 2 6768 746

NFPA 2001 Clean Agent Enclosure Integrity Test

Conducted by:

Tyco Fire & Security U.A.E. L.L.C.

P.O. Box 3333

Abu Dhabi, U.A.E.

Phone 00971 2 6777 776

Fax 00971 2 6768 746

August 09, 2021
CF3G00129

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Date of Test: August 09, 2021
Time: 1:51 PM

Tested by: RAJASEKARAN ELMALAI

Job ID: CF3G00129

Company

Name:

PPC/ENNPI

Address:

AGROD-AREA-030-EGYPT.

EGYPT

Telephone:

01022994848

Facsimile:

E-mail:

mohamed.maher@enppi.com

Contact:

Mohamed Maher

Location

Name:

CRUDE OIL TANK FARM PROJECTS

Address:

AGROD-AREA-30

AGROD

EGYPT

Telephone:

Facsimile:

E-mail:

ahmed.elsahafie@enppi.com

Contact:

Mr.Ahmed Elshafie

Zone Number:

SUBSTIAON-30

Zone Location:

TELECOM ROOM

Zone Description:

TELECOM ROOM

High Hazard: TELECOM CABINET

Height of High Hazard: 5.60 meters

Minimum Protected Height: 2.00 meters

Per:

Comments:

Telecom room doors Louver vent (Air vent) to be closed permanently and HVAC return duct does not have fire damper. fire damper to be install.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Zone Data

Protected Volume: 81.76 cu m
 Maximum protected height: 5.60 m (includes protected subfloor, if any)
 Minimum Protected height: 2.00 m
 Temperature inside zone: 28 C
 Temperature outside zone: 24 C
 Suppression Gas: Novec 1230 Sapphire
 Gas design concentration: 4.50%
 Weight/Volume of gas: 0.00 kg

Test Checklist

Tanks disconnected? Y
 Free return air flow path? Y
 Outside air pressure tube connected? Y
 HVAC system off? Y
 Panel in discharge mode? N
 Dampers activated? Y
 Static pressure present? Y

Test Data

Static pressure: 1.0 pa (air is blowing out of zone)

Zone depressurization: 36.3 pa

Air flow volume: 578 cfm

Orifice plate ratio: 1.00

Indicated leakage area (depressurization): 493.544 sq cm 0.049 sq m

Zone pressurization: 38.0 pa

Air flow volume: 672 cfm

Orifice plate ratio: 1.00

Indicated leakage area (pressurization): 780.530 sq cm 0.078 sq m

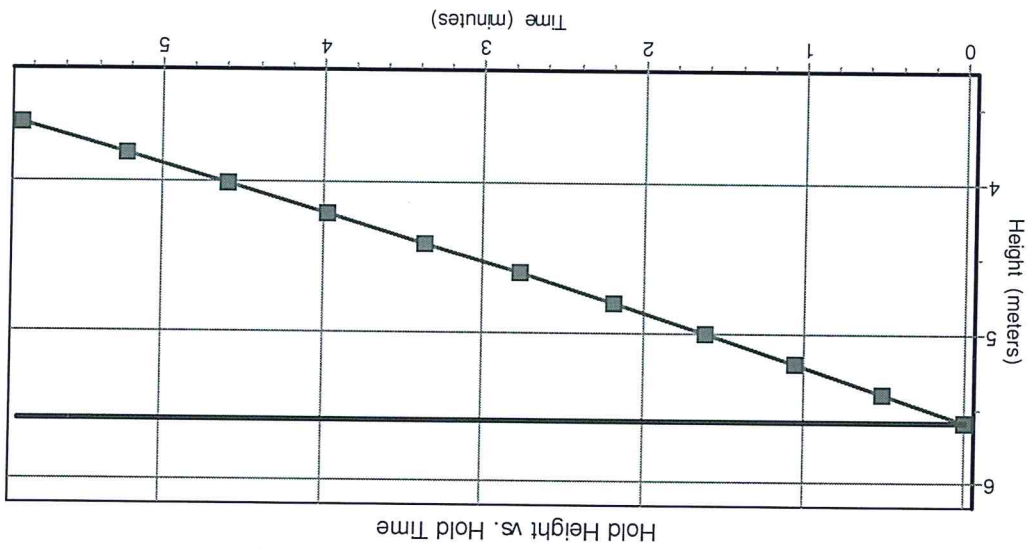
NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Test Procedure Leakage Area calculation results:
 Leakage area: 637.037 sq cm 0.064 sq m
 Predicted hold time at 2.00 m is 11.86 minutes.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Hold Height Hold Time

5.60	0.00
5.41	0.51
5.21	1.06
5.01	1.62
4.81	2.19
4.61	2.77
4.41	3.36
4.21	3.97
4.01	4.59
3.81	5.22
3.61	5.87



ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Leakage Survey

Problem Area	Rsp	Cor	Comments
Walls floor to deck?	Yes		
Walls caulked at floor?	N/A		
Walls caulked at deck?	N/A		
Doors weather-stipped?	Yes		
Door, drop seals?	Yes		
Door closers installed and adjusted?	Yes		
Windows caulked?	N/A		
Exiting conduits sealed?	Yes		
Exiting cables sealed?	Yes		
Cable trays sealed?	Yes		
All holes, penetrations sealed?	Yes		
Floor drains trapped and filled?	N/A		
Dampers installed on all exiting ducts?	Yes		
Dampers working and adjusted?	Yes		
Block walls painted?	Yes		
Ceiling tiles clipped?	N/A		
HVAC shut down?	Yes		
Gas exhaust dampered?	N/A		
Gas exhaust damper closed?	Yes		

Rsp = Response
Cor = Corrected
Par = Partial
RY = Reported Yes
? = Unknown
N/A = Not Applicable
I/A = Inaccessible

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Authority Having Jurisdiction

Name: RAJASEKARAN ELUMALAI

Title: COMMISSIONING ENGINEER

Company: TYCO FIRE and SECURITY

Telephone: 00971563988654 Facsimile: 026768746

E-mail: rajasekaran.elumalai@jci.com

Attendance

Mr. HAFEZ NOUR

Mr. HOSSAM SALAH

PPC
ENPPI
H. Hafez

Conditions

This test is a calculated prediction of the hold time and is based on the NFPA Enclosure Integrity Procedure, Appendix B, NFPA 12A, 1992 edition and Appendix C, NFPA 2001, 2000 edition and on the condition of the room at the time of the test. This test was conducted in accordance with the NFPA procedure.

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To assure the sealing integrity of the zone, NFPA 2001, 2000 edition Section 4-4 requires an annual inspection and possible retesting of the zone.

Test conducted by:

Rajasekaran Elumalai

RAJASEKARAN ELUMALAI

ATTENTION

This room is protected with a clean agent gaseous fire extinguishing system.

To be effective in a fire emergency the fire suppression agent must be retained in the room.

Upon installation of this system, all doors were equipped with automatic closers, weather stripping and floor seals; all cables and conduits leading in or out of the room were sealed (including those above the ceiling or under the raised floor); and all leaks or cracks were sealed. As required, the room was tested per NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Procedure to assure it was properly sealed to retain the fire suppression agent.

For the safety of the occupants and equipment in this room:

1. Doors must not be blocked open.

2. All weather stripping and seals must be maintained in good operating condition.

3. Any new cables or conduits leading in or out of the room must be caulked and sealed.

4. Any holes or penetrations through the walls must be repaired and sealed.

To assure the sealing integrity of this room, NFPA 2001, 2000 edition, Section 4-4 requires an annual inspection and possible retesting of this room.

Test results:

Date: **August 09, 2021**

Minimum Hold Height: **2.00 m**

Hold Time:

11.86 minutes

Leakage Area:

0.064 sq m

Next inspection due one year from Test Date.

For more information or to schedule an inspection contact:

Tyco Fire & Security U.A.E. L.L.C.
P.O. Box 3333
Abu Dhabi, U.A.E.

Phone 00971 2 6777 776
Fax 00971 2 6768 746

NFPA 2001 Clean Agent Enclosure Integrity Test

Conducted by:

Tyco Fire & Security U.A.E. L.L.C.
P.O. Box 3333
Abu Dhabi, U.A.E.

Phone 00971 2 6777 776
Fax 00971 2 6768 746

August 31, 2021
CF3G00129

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Time: 5:01 PM

Date of Test: August 31, 2021
Tested by: RAJASEKARAN ELUMALAI
Job ID: CF3G00129

Company

PPC/ENNPI

Name:

AGROD-AREA-030-EGYPT.
EGYPT

Telephone:

01022994848

Facsimile:

E-mail:

mohamed.maher@enppi.com

Contact:

Mohamed Maher

Location

Name:

CRUDE OIL TANK FARM PROJECTS

Address:

AGROD-AREA-30

AGROOD

EGYPT

Telephone:

Facsimile:

E-mail:

ahmed.elsahfie@enppi.com

Contact:

Mr.Ahmed Elshafie

Zone Number: SUBSTIAON-30

Zone Location: SWITCH GEAR ROOM

Zone Description: SWITCH GEAR ROOM

High Hazard: ELECTRICAL CABINETS

Height of High Hazard: 5.60 meters

Minimum Protected Height: 2.75 meters

Per:

Comments: 1. HVAC duct fire damper access panel to be seal properly. 2. Switch gear room door to be align and to be seal properly with weather strips.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Zone Data

Protected Volume: 2200.00 cu m
 Maximum protected height: 5.60 m (includes protected subfloor, if any)
 Minimum Protected height: 2.75 m
 Temperature inside zone: 28 C
 Temperature outside zone: 32 C
 Suppression Gas: Novec 1230 Sapphire
 Gas design concentration: 4.50%
 Weight/Volume of gas: 0.00 kg

Test Checklist

Tanks disconnected? Y
 Free return air flow path? Y
 Outside air pressure tube connected? Y
 HVAC system off? Y
 Panel in discharge mode? N
 Dampers activated? Y
 Static pressure present? Y

Test Data

Static pressure: 1.8 pa (air is blowing out of zone)
 Zone depressurization: 37.4 pa
 Air flow volume: 2920 cfm
 Orifice plate ratio: 1.00
 Indicated leakage area (depressurization): 2348.815 sq cm 0.235 sq m
 Zone pressurization: 37.3 pa
 Air flow volume: 3070 cfm
 Orifice plate ratio: 1.00
 Indicated leakage area (pressurization): 3864.118 sq cm 0.386 sq m

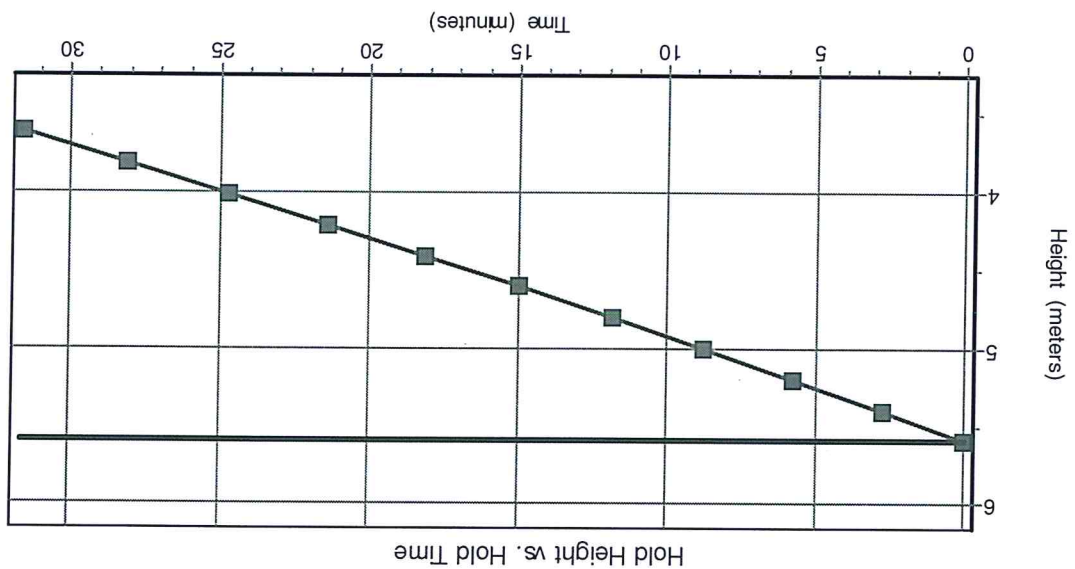
NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Test Procedure Leakage Area calculation results:
 Leakage area: 3106.467 sq cm 0.311 sq m
 Predicted hold time at 2.75 m is 47.60 minutes.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Hold Height Hold Time

5.60	3.61
5.41	3.81
5.21	4.01
5.01	4.21
4.81	4.41
4.61	4.61
4.41	4.81
4.21	5.01
4.01	5.21
3.81	5.41
3.61	5.61
3.41	5.81
3.21	6.01
3.01	6.21
2.81	6.41
2.61	6.61
2.41	6.81
2.21	7.01
2.01	7.21
1.81	7.41
1.61	7.61
1.41	7.81
1.21	8.01
1.01	8.21
0.81	8.41
0.61	8.61
0.41	8.81
0.21	9.01
0.00	9.21



ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Leakage Survey

Problem Area	Rsp	Cor	Comments
Walls floor to deck?		Yes	
Walls caulked at floor?	N/A		
Walls caulked at deck?	N/A		
Doors weather-stipped?	Yes		
Door, drop seals?	Yes		
Door closers installed and adjusted?	Yes		
Windows caulked?	N/A		
Exiting conduits sealed?	Yes		
Exiting cables sealed?	Yes		
Cable trays sealed?	Yes		
All holes, penetrations sealed?	Yes		
Floor drains trapped and filled?	N/A		
Dampers installed on all exiting ducts?	Yes		
Dampers working and adjusted?	Yes		
Block walls painted?	Yes		
Ceiling tiles clipped?	N/A		
HVAC shut down?	Yes		
Gas exhaust dampered?			
Gas exhaust damper closed?			

Rsp = Response
 Cor = Corrected
 Par = Partial
 RY = Reported Yes
 ? = Unknown
 N/A = Not Applicable
 I/A = Inaccessible

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Authority Having Jurisdiction

Name: RAJASEKARAN ELUMALAI

Title: COMMISSIONING ENGINEER

Company: TYCO FIRE and SECURITY

Telephone: 00971563988654 Facsimile: 026768746

E-mail: rajasekaran.elumalai@jci.com

Attendance

Mr. HAFEZ NOUR

Mr. HOSSAM SALAH

ENPPI

PPC

M. Omar

for J. Elumalai

Conditions

This test is a calculated prediction of the hold time and is based on the NFPA Enclosure Integrity Procedure, Appendix B, NFPA 12A, 1992 edition and Appendix C, NFPA 2001, 2000 edition and on the condition of the room at the time of the test. This test was conducted in accordance with the NFPA procedure.

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To assure the sealing integrity of the zone, NFPA 2001, 2000 edition Section 4-4 requires an annual inspection and possible retesting of the zone.

Test conducted by:

Raj

RAJASEKARAN ELUMALAI

ATTENTION

This room is protected with a clean agent gaseous fire extinguishing system.

To be effective in a fire emergency the fire suppression agent must be retained in the room.

Upon installation of this system, all doors were equipped with automatic closers, weather stripping and floor seals; all cables and conduits leading in or out of the room were sealed (including those above the ceiling or under the raised floor); and all leaks or cracks were sealed. As required, the room was tested per NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Procedure to assure it was properly sealed to retain the fire suppression agent.

For the safety of the occupants and equipment in this room:

1. Doors must not be blocked open.

2. All weather stripping and seals must be maintained in good operating condition.

3. Any new cables or conduits leading in or out of the room must be caulked and sealed.

4. Any holes or penetrations through the walls must be repaired and sealed.

To assure the sealing integrity of this room, NFPA 2001, 2000 edition, Section 4-4 requires an annual inspection and possible retesting of this room.

Test results:

Date: **August 31, 2021**

Minimum Hold Height: **2.75 m**

Hold Time:

47.60 minutes

Leakage Area: **0.311 sq m**

Next inspection due one year from Test Date.

For more information or to schedule an inspection contact:

Tyco Fire & Security U.A.E. L.L.C.

P.O. Box 3333

Abu Dhabi, U.A.E.

Phone 00971 2 6777 776

Fax 00971 2 6768 746

NFPA 2001 Clean Agent Enclosure Integrity Test

Conducted by:

Tyco Fire & Security U.A.E. L.L.C.
P.O. Box 3333
Abu Dhabi, U.A.E.

Phone 00971 2 6777 776
Fax 00971 2 6768 746

August 30, 2021
CF3G00129

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Time: 1:30 PM

Date of Test: August 30, 2021
Tested by: RAJASEKARAN ELMALAI
Job ID: CF3G00129

Company

PPC/ENMPI

Name:

AGROD-AREA-030-EGYPT.

Address:

EGYPT

Telephone:

01022994848

Facsimile:

E-mail:

mohamed.maher@enppi.com

Contact:

Mohamed Maher

Location

Name:

CRUDE OIL TANK FARM PROJECTS

Address:

AGROOD-AREA-30

AGROOD

EGYPT

Telephone:

Facsimile:

E-mail:

ahmed.elsahfie@enppi.com

Contact:

Mr.Ahmed Elshafie

Zone Number: SUBSTIAON-30

Zone Location: CABLE CELLAR ROOM

Zone Description: CABLE CELLAR ROOM

High Hazard: ELECTRICAL AND PLC CABLES

Height of High Hazard: 3.03 meters

Minimum Protected Height: 2.23 meters

Per:

Comments: Cable cellar room doors Louver vent (Air vent) to be closed permanently .

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Zone Data

Protected Volume:	1750.00 cu m
Maximum protected height:	3.03 m
Minimum Protected height:	2.23 m
Temperature inside zone:	28 C
Temperature outside zone:	32 C
Suppression Gas:	Novac 1230 Sapphire
Gas design concentration:	4.50%
Weight/Volume of gas:	0.00 kg

Test Checklist

Tanks disconnected?	Y
Free return air flow path?	Y
Outside air pressure tube connected?	Y
HVAC system off?	Y
Panel in discharge mode?	N
Dampers activated?	Y
Static pressure present?	Y

Test Data

Static pressure:	1.4 pa	(air is blowing out of zone)
Zone depressurization:	19.5 pa	
Air flow volume:	3816 cfm	
Orifice plate ratio:	1.00	
Indicated leakage area (depressurization):	4088.198 sq cm	0.409 sq m
Zone pressurization:	20.2 pa	
Air flow volume:	4129 cfm	
Orifice plate ratio:	1.00	
Indicated leakage area (pressurization):	7479.933 sq cm	0.748 sq m

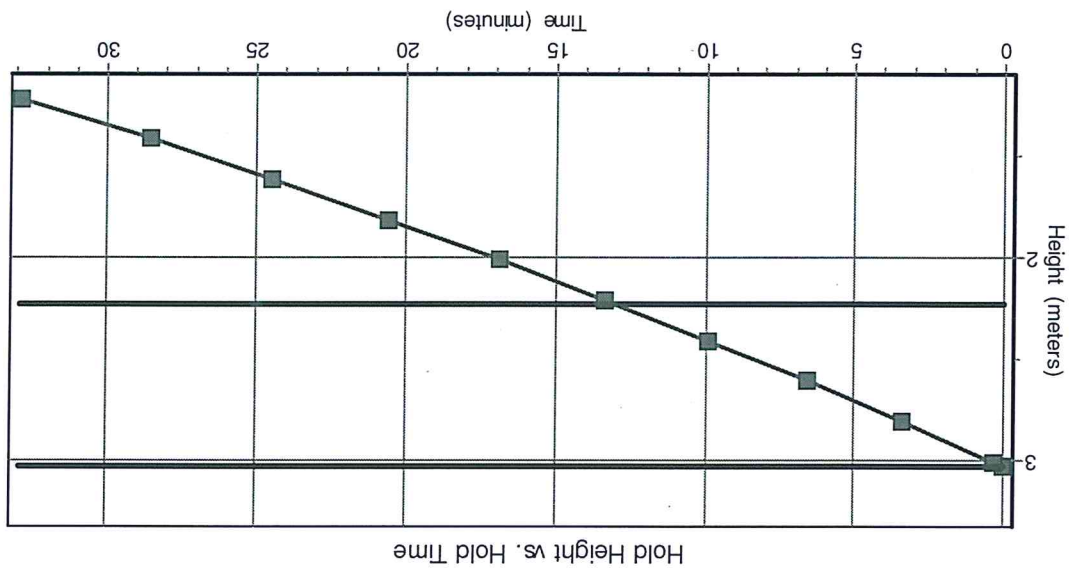
NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Test Procedure Leakage Area calculation results:
 Leakage area: 5784.066 sq cm 0.578 sq m
 Predicted hold time at 2.23 m is 12.99 minutes.

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Hold Height Hold Time

3.03	0.00
3.01	0.31
2.81	3.41
2.61	6.61
2.41	9.91
2.21	13.34
2.01	16.89
1.81	20.60
1.61	24.48
1.41	28.55
1.21	32.85



ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Leakage Survey

Problem Area	Rsp	Cor	Comments
Walls floor to deck?		Yes	
Walls caulked at floor?	N/A		
Walls caulked at deck?	N/A		
Doors weather-stipped?	Yes		
Door, drop seals?	Yes		
Door closers installed and adjusted?	Yes		
Windows caulked?	N/A		
Exiting conduits sealed?	Yes		
Exiting cables sealed?	Yes		
Cable trays sealed?	Yes		
All holes, penetrations sealed?	Yes		
Floor drains trapped and filled?	N/A		
Dampers installed on all exiting ducts?			
Dampers working and adjusted?	Yes		
Block walls painted?			
Ceiling tiles clipped?	N/A		
HVAC shut down?	Yes		
Gas exhaust dampered?			
Gas exhaust damper closed?	N/A		

Rsp = Response
 Cor = Corrected
 Par = Partial
 RY = Reported Yes
 ? = Unknown
 N/A = Not Applicable
 I/A = Inaccessible

ENCLOSURE INTEGRITY TEST REPORT

CF3G00129

Authority Having Jurisdiction

Name: RAJASEKARAN ELUMALAI

Title: COMMISSIONING ENGINEER

Company: TYCO FIRE and SECURITY

Telephone: 00971563988654 Facsimile: 026768746

E-mail: rajasekaran.elumalai@jci.com

Attendance

Mr. HAFEZ NOUR

Mr. HOSSAM SALAH

ENPPI

PPC

M. Omar
to Raj

Conditions

This test is a calculated prediction of the hold time and is based on the NFPA Enclosure Integrity Procedure, Appendix B, NFPA 12A, 1992 edition and Appendix C, NFPA 2001, 2000 edition and on the condition of the room at the time of the test. This test was conducted in accordance with the NFPA procedure.

The Software was produced by Fire Safety Technology division of Worldwide Trade & Services, Inc. and is based on the equations and calculations in the above cited NFPA standards.

The Fire Safety Technology division nor Worldwide Trade & Services, Inc. assumes no responsibility or liability for the passage of a discharge test or for maintaining the concentration of the suppression gas for the predicted time in case of an actual emergency.

To assure the sealing integrity of the zone, NFPA 2001, 2000 edition Section 4-4 requires an annual inspection and possible retesting of the zone.

Test conducted by:

Raj

RAJASEKARAN ELUMALAI

ATTENTION

This room is protected with a clean agent gaseous fire extinguishing system.

To be effective in a fire emergency the fire suppression agent must be retained in the room.

Upon installation of this system, all doors were equipped with automatic closers, weather stripping and floor seals; all cables and conduits leading in or out of the room were sealed (including those above the ceiling or under the raised floor); and all leaks or cracks were sealed. As required, the room was tested per NFPA 2001, 2000 edition, Appendix C, Enclosure Integrity Procedure to assure it was properly sealed to retain the fire suppression agent.

For the safety of the occupants and equipment in this room:

1. Doors must not be blocked open.

2. All weather stripping and seals must be maintained in good operating condition.

3. Any new cables or conduits leading in or out of the room must be caulked and sealed.

4. Any holes or penetrations through the walls must be repaired and sealed.

To assure the sealing integrity of this room, NFPA 2001, 2000 edition, Section 4-4 requires an annual inspection and possible retesting of this room.

Test results:

Date: **August 30, 2021**

Minimum Hold Height: **2.23 m**

Hold Time:

12.99 minutes

Leakage Area: **0.578 sq m**

Next inspection due one year from Test Date.

For more information or to schedule an inspection contact:

Tyco Fire & Security U.A.E. L.L.C.



P.O. Box 3333




Abu Dhabi, U.A.E.



Phone 00971 2 6777 776



Fax 00971 2 6768 746

7.02- Piping Commissioning Check Lists

System ID		030-LP-001
System Description		Substation building clean agent system
<div><div><div>Emppi PETROJET</div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div>		


<div><div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>پترو جيت</div></div></div><div><div>الهيئة العامة للغازات والبترول General Petroleum & Mineral Resources Authority</div></div></div>		System ID	030-LP-002	System Description	Substation building & Guard house FACP Fire detection system
<div>8- Mechanical pre-Commissioning</div>					

<div><div><div>Enppi PETROJET</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div></div>					

<div> <div>  <div> <div>Enppi</div> <div>پترو جيت</div> </div> </div> <div> <div> <div>Project: 01251-100</div> <div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div> </div> <div>  </div> </div> </div>	
System ID	030-LP-001
System Description	Substation building clean agent system
<div>8.01-System Mechanical Index</div>	


8.02- Equipment Drawings

System ID		030-LP-001
System Description		Substation building clean agent system







Enppi
PETROJET



Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)





الجمهورية العراقية
وزارة النفط
مديرية العمليات



<div>  <div> <div>Project: 01251-100</div> <div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div> </div>  </div>	
System ID	030-L-P-001
System Description	Substation building clean agent system
<div>8.03- Equipment Datasheets</div>	

<div><div><p>Enppi PETROJET</p></div><div><p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p></div><div><p>الوزارة العراقية للنفط Iraqi Ministry of Oil</p></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>8.04- Boxing-up Certificates</div>					

<div><div><p>Enppi PETROJET</p></div><div><p>Project: 01251-100</p><p>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p><div><p>الهندسة البترولية Petroleum Engineering Company</p></div></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system


8.05- Grouting Certificates

<div><div><p>Enppi</p></div><div><p>Project: 01251-100</p><p>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system
<div>8.06- Pre-Alignment Certificates</div>			


<div><div><div>Enppi PETROJET النفط</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>8.07- Mechanical Pre-Commissioning Checklists</div>					

9- Mechanical Commissioning




System ID	030-LP-001
System Description	Substation building clean agent system







Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)






9.01- Final Alignment Certificates



System ID	030-LP-001
System Description	Substation building clean agent system
<div><div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div>	




<div>  Enppi PETROJET شركة البترول شركة البترول </div> <div> Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA) </div> <div>  وزارة النفط Ministry of Oil </div>		System ID 030-LP-001	System Description Substation building clean agent system
<div> <p>9.02- Motor Solo Run Certificates</p> </div>			

<div><div><p>Enppi PETROJET</p></div><div><p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p></div><div><p>شركة بتروجيت Petrojet Services Company</p></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>9.03- Mechanical Run Test (MRT) Certificates</div>					




9.04- Mechanical Commissioning Checklists

System ID	030-LP-001
System Description	Substation building clean agent system
<div><div>Enppi</div><div>PETROJET</div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div>السعودية العربية للنفط Saudi Aramco Company</div></div>	



<div><div><div>Enppi</div><div>پتروكيمياويات</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>پتروكيمياويات</div><div>Petrochem Company</div></div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>9.05- Mechanical Supplier Check Lists & Reports</div>					

<div><p>Enppi</p></div> <div><p>Project: 01251-100</p><p>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p><div><p>PETROJET</p></div><div><p>پتروكيم</p></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>10- Instrumentation Pre-Commissioning</div>					



10.01- System Instrument Index

System ID	030-LP-001
System Description	Substation building clean agent system
<div><div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div>	



10.02- Instrument Data Sheets



System ID	030-LP-001
System Description	Substation building clean agent system
<div><div><div>Enppi PETROJET</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div></div><div><div>وزارة النفط Ministry of Oil</div></div></div>	

10.03- Instrument Cable Schedule

System ID	030-L-P-001
System Description	Substation building clean agent system
<div data-bbox="1129 1930 1412 2016">  Enppi PETROJET </div> <div data-bbox="531 1930 1034 1993"> Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA) </div> <div data-bbox="258 1915 454 2004">  وزارة النفط Ministry of Oil </div>	



10.04-System Instrumentation Wiring Diagram

<div><div><div>Enppi PETROJET</div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>الوزارة المجلس المجلس المجلس</div></div></div>	
System ID	030-LP-001
System Description	Substation building clean agent system



<div><div><div>Enppi</div><div>PETROJET</div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system



10.05- Hook-up Drawing (Mechanical & Pneumatic)

10.06- Instruments Cables Schedule

System ID		030-LP-001
System Description		Substation building clean agent system
 Enppi PETROJET		Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)
		



10.07- Instruments Cables Laying Certificates



	<p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p>	
System ID	030-LP-001	System Description
		Substation building clean agent system

<div><div><div>Enppi PETROJET</div></div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system



10.08- Instruments Cables Termination Certificates



10.09-Instruments Cables Testing Certificates






 Project: 01251-100
 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

<div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>مؤسسة البترول Petrojet Company</div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>10.10- Instruments Calibration Certificates</div>					

10.11 - Instrument Loop Checks Certificates



 Enppi PETROJET		Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)		 وزارة النفط Iraq Ministry of Oil	
System ID		030-LP-001		Substation building clean agent system	
System Description					



<div><div><div>Enppi</div><div>پترو جیٹ</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>پترو جیٹ</div></div></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system
<div>10.12- Instrumentation Pre-Commissioning Check Lists</div>			

<div>Enppi</div> <div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div> <div>Project: 01251-100</div> <div>PETROJET</div> <div>النفط العربي</div>	
System ID	030-LP-001
System Description	Substation building clean agent system

10.13-Instrumentation Supplier Check Lists & Reports

11- Instrumentation Commissioning

System Description	Substation building clean agent system
System ID	030-LP-001
<div><div><div>Enppi PETROJET</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>	

<div><div><div><div>Enppi</div><div>PETROJET</div></div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system
<div>11.01) Instrumentation Function Test Certificates</div>			

MINUTES OF MEETING		PROJECT TITLE : EGPC Crude Oil Tank Farms Project (AGROOD 30) (Module 01)		PROJECT No : 1251-100		DATE : 5-9-2021	
CUSTOMER : EGPC (PPC)		MEETING DATE : 5-9-2021		LOCATION : Agrod, Suez, EGYPT		WRITTEN BY : Ahmed El Shafie	
DEPARTMENT : Commissioning & Startup		FILE No :		MEETING No : [MEETING No]		PURPOSE OF MEETING:	
Fire & Gas Cause & Effect Verification Finalization for Agrod Area 30 (Module-01)							
ATTENDEES:							
ENPPI <i>H. Ashraf</i>		PETROJET <i>Sobhy Sedek</i>		PPC <i>M. Omar</i>			
DISTRIBUTION:							

MINUTES OF MEETING

(Cont'd)

PROJECT No : 1251-100			MEETING No : MEETING No1	MEETING DATE : 5-9-2021
ITEM No	DESCRIPTION OF DISCUSSION			ACTION BY
	DATE			



- This close-out meeting was held between ENPPI, PETROJET and PPC to certify the completion of Fire and gas cause-and-effect verification for Agrod area 30 entirely.
- Fire and gas cause-and-effect verification have been tested, witnessed, and approved by PPC.
- Signing off this MOM does not relieve any contractor from their contractual obligations.

Exceptions:


* GD-013 shall be fixed (cleared) Sub

* 2 smoke detectors in battery room.
* 4 Gas detectors ZAM modules.



Enppi
petrojet
ppc
Ali Ashraf
Sobhydeen
M. Omar

<div>  Enppi PETROJET مشروع البترول </div> <div> Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)  وزارة النفط </div>		System ID 030-LP-001	System Description Substation building clean agent system
<h1>11.02- Instrumentation Supplier Check Lists & Reports</h1>			

12- Electrical Pre-Commissioning



 <p>Enppi Petrojet</p>	
<p>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p>	
System ID	030-LP-001
System Description	Substation building clean agent system





 Enppi PETROJET		Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)		
System ID		030-LP-001		
System Description		Substation building clean agent system		

12.01 - System Electrical Index

12.02- Electrical Drawings

System ID		030-LP-001
System Description		Substation building clean agent system
<div><div><div>Enppi PETROJET محيطيات</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>محيطيات Petrojet Company</div></div></div></div>		

12.03- Motor Datasheets

System Description	Substation building clean agent system
System ID	030-LP-001
<div data-bbox="1109 1948 1380 2038">  </div> <div data-bbox="510 1937 1013 2004"> Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA) </div> <div data-bbox="231 1915 438 2004">  </div>	

12.04- Electrical Cables Schedule



System ID	030-LP-001
System Description	Substation building clean agent system





Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)





12.05- Electrical Cables Laying Certificates

System ID	030-LP-001	System Description	Substation building clean agent system
 Enppi PETROJET		Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)	
 PETROJET شركة البترول الوطنية الكويتية			



12.06- Electrical Cables Testing Certificates

System ID		030-LP-001
System Description		Substation building clean agent system
 Enppi PETROJET شركة بتروجيت		
Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)		
 الهيئة العامة للغذاء والدواء Ministry of Health		



12.07- Electrical Cables Termination Certificates



System ID		030-LP-001
System Description		Substation building clean agent system
<div>Enppi PETROJET</div> <div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div> <div></div>		

12.08- FAT Reports & Certificates

System ID	030-LP-001
<div><div><div><div>Enppi</div><div>پتروجت</div></div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div></div><div></div></div>	
System Description	Substation building clean agent system



12.09- SAT Reports & Certificates

System ID	030-LP-001
System Description	Substation building clean agent system
<div><div><div><div>Enppi</div><div>پتروپي</div><div>PETROJET</div></div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div><div>پتروپي</div><div>پتروپي پراجيکٽس ڪمپاني</div></div></div></div>	

<div><p>Enppi</p></div> <div><p>Project: 01251-100</p><p>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</p><div><p>الهيئة العامة للغازات والبترول General Petroleum Corporation</p></div></div>		System ID	030-LP-001
		System Description	Substation building clean agent system

12.10- Electrical Pre-Commissioning Check Lists

12.11 - Electrical Supplier Check Lists & Reports

System ID		030-LP-001
System Description		Substation building clean agent system
 Enppi PETROJET		Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA) 



13- Electrical Commissioning

System ID		030-LP-001
System Description		Substation building clean agent system
Enppi PETROJET		Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)
		شركة بتروجت شركة بتروجت



13.01- Electrical -Commissioning Check Lists

System ID	030-LP-001
System Description	Substation building clean agent system

Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)


<div><div><div><div>Enppi</div><div>پتروپي</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div></div>		System ID	030-LP-001	System Description	Substation building clean agent system
<div>13.02- Electrical Supplier Check Lists & Reports</div>					

14- Red Marked-up Drawings


System ID		030-LP-001
System Description		Substation building clean agent system
<div><div> PETROJET</div><div>Project: 01251-100 CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div> Petrojet Hydrate Company</div></div>		

14.02- Instrumentation Drawings



System ID	030-LP-001
System Description	Substation building clean agent system


PETROJET

Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



14.03- Electrical Drawings

System ID		030-LP-001
System Description		Substation building clean agent system
<div><div><div>Enppi</div><div>پترو جت</div></div><div><div>Project: 01251-100</div><div>CRUDE OIL TANK FARM PROJECT (AGROOD AREA)</div><div></div></div></div>		